

## UNIT 3: CELL STRUCTURE AND FUNCTION

### CHAPTER 8: CELL: THE UNIT OF LIFE

#### ONE MARK QUESTIONS

1. Name the fundamental, structural and functional unit of life. (K)
2. Which is the basic unit of life? (K)
3. What is a cell? (K)
4. Who observed the cell for the first time? (K)
5. Who formulated the 'cell theory'? (K)
6. What does '*omnis cellula-e-cellula*' mean?
7. Who proposed the modified 'cell theory'? (K)
8. What are prokaryotes? (K)
9. What are eukaryotes? (K)
10. Which region is the main area of cellular activities in a cell? (K)
11. Give an example of smallest cell. (K)
12. Which is the largest isolated single cell? (K)
13. Name the outermost layer of cell envelope in bacteria. (K)
14. What are inclusion bodies? (K)
15. Name non-membrane bound cell organelle found only in animal cells. (K)
16. What are plasmids? (K)
17. What do you call a small circular DNA found outside genomic DNA of bacteria? (K)
18. What is the function of plasmid? (K)
19. What is glycocalyx? (K)
20. What do u call a bacteria which takes up Gram's stain? (K)
21. What are pili? (K)
22. Who proposed 'fluid mosaic model' of plasma membrane? (K)
23. The hydrophobic tails of lipids are towards the inner part. Why? (U)
24. What is the lipid component of membrane made up of? (K)
25. Why is the cell membrane structure called as 'fluid' model? (U)
26. What is the movement of water by diffusion called? (K)
27. What is diffusion? (K)
28. Give an example for active transport. (K)
29. Name the component of the middle lamella. (K)
30. What is the function of the middle lamella. (K)
31. What is plasmodesmata? (K)
32. What is the function of plasmodesmata? (K)
33. Which type of endoplasmic reticulum is involved in lipids/steroidal hormones? (K)
34. Which organelle is involved in the synthesis of steroidal hormone synthesis? (K)
35. RER is frequently of observed in cells with secretory function. Why? (U)
36. Why mitochondria and chloroplast are not included under endomembrane system. (U)
37. Who discovered Golgi Apparatus? (K)
38. What is tonoplast? (K)

39. Name the membrane of vacuole. (K)
40. Why is the concentration of vacuolar sap always higher? (A)
41. Which organelle synthesizes lysosomes? (K)
42. What is the content of the lysosome vesicles? (K)
43. Write the function of contractile vacuole of Amoeba. (K)
44. What is the role of cristae in mitochondria? (K)
45. Why mitochondria are called as the 'power house' of the cell? (U)
46. How do mitochondria multiply? (K)
47. What are plastids? (K)
48. Name the plastid which stores proteins. (K)
49. Name the plastid which stores Starch. (K)
50. Name the plastid which stores oils and fats. (K)
51. What are chromatophores? (K)
52. What are thylakoids? (K)
53. How many chloroplasts are found in *Chlamydomonas*? (K)
54. Name the plant cell which has one chloroplast. (K)
55. Where do you find chlorophyll pigments? (K)
56. What is the name of a stack of thylakoids? (K)
57. Who discovered ribosomes? (K)
58. What is a polysome? (K)
59. Name the non-membrane bound cell organelle (K)
60. Name the site of rRNA synthesis. (K)
61. Cilia functions like oars. Justify. (U)
62. Name the structure from which cilia and flagella arise. (K)
63. What is centrosome made up of? (K)
64. What are the fibrils of centrioles made up of? (K)
65. Who discovered the nucleus of a cell? (K)
66. What is the function of Nucleolus? (K)
67. What are kinetochores? (K)
68. What is a centromere? (K)
69. What are microbodies? (K)

#### **TWO MARKS QUESTIONS**

70. State 'cell theory'. (K)
71. Briefly explain the modified cell theory. (U)
72. List four types of organisms that represent prokaryotic cell. (K)
73. Name the four basic shapes of bacteria. (K)
74. What are plasmids? Mention any one special character conferred by plasmids. (K)
75. Distinguish Gram positive bacteria from Gram negative bacteria. (U)
76. What are mesosomes? Mention any one function. (K)
77. Classify the bacteria based on Gram's staining. (U)
78. Differentiate between pili and fimbriae. (U)
79. What are inclusion bodies? Give an example. (K)
80. Write the importance of fluid nature of plasma membrane. (K)

81. Classify the membrane proteins based on the ease of extraction. (U)
82. What is active transport? Give an example. (K)
83. Write the benefits of fluid nature of the membrane. (K)
84. Mention any four functions of cell wall. (K)
85. Name the four endomembrane organelles. (K)
86. Why mitochondria, chloroplast and peroxisomes though membranous are not a part of endomembrane system? (A)
87. Name two types endoplasmic reticulum with any one function of each. (K)
88. Name the compartments created by ER in the intracellular space. (K)
89. Sketch and label Golgi apparatus. (S)
90. Name the two faces of cisternae of Golgi Apparatus. (K)
91. Write the functions of cis and trans face of Golgi Apparatus. (K)
92. List out the functions of Golgi Apparatus. (K)
93. List the hydrolytic enzymes present in Lysosomes. (K)
94. Name the vacuoles found in Amoeba and protists.
95. Write the functions of vacuole. (K)
96. What are the contents of stroma of chloroplast? (K)
97. Mention the cell organelles which contain both DNA and ribosomes. (K)
98. List the types of ribosomes found in prokaryotes and eukaryotes. (K)
99. Write the components of ribosomes. (K)
100. What does 'S' stand for in 70s type of ribosomes? (U)
101. Write the functions of cytoskeleton. (U)
102. Draw a diagram of cilia depicting internal structure of cilia. (S)
103. Write the functions of Nuclear pores. (K)
104. Name the animal cell and plant cell which lack Nucleus. (K)
105. What is chromatin made up of? (K)
106. Classify the chromosomes based on the position of centromere. (U)
107. List four types of chromosomes based on position of centromere. (U)
108. Draw diagrams of four types of chromosomes based on centromere. (S)
109. What are satellites? (K)

### THREE MARKS QUESTIONS

110. Multicellular organisms have division of labour. Explain. (U)
111. Cell is the basic unit of life. Discuss in brief. (U)
112. Write a short note on Glycocalyx. (K)
113. List any six functions of mesosomes. (U)
114. Name the three components of bacterial flagellum. (K)
115. List out the functions of plasma membrane. (K)
116. List out the chemical components found in cell wall of algae and plants. (K)
117. Write a short note on cell wall (U)
118. Draw a neat labelled diagram of Endoplasmic reticulum. (S)
119. Differentiate smooth endoplasmic reticulum from rough endoplasmic reticulum. (U)
120. Briefly explain the structure of Golgi Apparatus? (U)

121. Write a short note on functions of Golgi Apparatus. (U)
122. Draw a neat labelled diagram of Mitochondria? (S)
123. What are the contents of mitochondrial matrix and what is their function? (K)
124. Classify the plastids based on the type of pigments they contain? (U)
125. List different types of plastids. (K)
126. Explain the three types of plastids. (U)
127. List the three different types of Leucoplasts & mention the type of reserve food material they store. (K)
128. Draw a neat labelled diagram of chloroplast. (K)
129. Write a short note on centrosome. (U)
130. Explain hub and spokes with respect to centrioles. (U)
131. What is cytoskeleton? Write any two functions. (K)
132. Draw a neat labelled diagram of nucleus. (S)
133. Mention the functions of the following: (k)
  - a) Endoplasmic reticulum
  - b) Ribosomes
  - c) Mitochondria
134. Which organelle is called Packaging apparatus & why? (U)
135. Draw a labelled diagram depicting internal structure of cilia.(S)

#### **FIVE MARKS QUESTIONS:**

136. Describe the structure of prokaryotic cell. (U)
137. List out the salient features of prokaryotic cell. (K)
138. Write any five differences between prokaryotic cell and eukaryotic cell. (U)
139. Draw a neat labelled diagram of plant cell. (S)
140. Draw a neat labelled diagram of animal cell. (S)
141. Distinguish plant cell from animal cell. (U)
142. Explain Fluid Mosaic Model of plasma membrane. (U)
143. Explain the structure of mitochondria with a neat labelled diagram. (U)
144. Describe the structure of chloroplast with a neat labelled diagram. (U)
145. Describe the structure of sectional view of cilia with the help of a diagram. (U)
146. Explain the structure of nucleus with a neat labelled diagram. (U)
147. Describe the structure of chromosome. (U)
148. Name the organelles in which following structures are found: (K)
  - a) Cisternae
  - b) Cristae
  - c) Thylakoids
  - d) Nucleolus
  - e) Tonoplast
149.
  - a) Classify the chromosomes based on the position of centromere. (U)
  - b) Many nucleoli are found in cells involved in protein synthesis. Why? (U)
  - c) Draw a neat labelled diagram of Nucleus. (S)

150. Name the following:
- a) Power house of the cell
  - b) Site of steroidal hormone synthesis
  - c) Reservoir of hydrolytic enzymes
  - d) Packaging units of cell
  - e) Locomotory structures of cell